

Claim Amendments

1-14 (Cancelled).

15. (Previously Presented) The system of claim 26, the first and second compression barrels each having a taper at the first end thereof, wherein the first and second compression seals each have a tapered end to mate with the taper at the first ends of the first and second compression barrels.

16. (Original) The system of claim 15, wherein the first and second connector bodies each have a passage defined therein, the passage in the first connector body being adapted to receive the at least one optic fiber from the surface cable assembly, and the groove in the second connector body being adapted to receive the at least one optic fiber from the motor lead cable, wherein ends of the at least one optic fiber from the surface cable assembly and from the motor lead cable assembly form a butt junction.

17-25 (Cancelled).

26. (Previously Presented) A system for providing transmission of optical signals through a wellbore, the system comprising:

a surface cable assembly comprising electrical conductors and at least one optic fiber running into the wellbore from the surface;

an electric submersible motor having a motor casing, and having one or more optic fibers disposed therein;

a motor lead cable assembly comprising electrical conductors and at least one optic fiber, the electrical conductors and the at least one optic fiber terminating in a plug at an

end of the motor lead cable assembly, the motor lead cable being connectable to the electric submersible motor by inserting the plug in a receptacle defined in the motor casing, thereby connecting the at least one optic fiber in the motor lead cable to the one or more optic fibers in the electrical submersible motor, wherein the electrical conductors in the power cable are connected to the electrical conductors in the motor lead cable; and

a splice for connecting the at least one optic fiber in the surface cable assembly to the at least one optic fiber in the motor lead cable assembly, wherein the at least one optic fiber in the motor casing is adapted to be connected to the at least one optic fiber in the motor lead cable assembly to transmit a signal representative of a sensed parameter, the splice for connecting the end of the surface cable assembly to the end of the motor lead cable assembly comprising:

first and second compression barrels, each having first and second ends, the first end having an opening for receiving an optic fiber;

first and second connector bodies threadedly connected to the first and second compression barrels, respectively; and

a first compression seal positioned between the first compression barrel and the first connector body, and a second compression seal positioned between the second compression barrel and the second connector body, wherein the at least one optic fiber from the surface cable assembly is inserted into the first compression barrel and the at least one optic fiber from the motor lead cable is inserted into the second compression barrel to form a butt splice when the first and second connector bodies are connected to each other and to the first and second compression barrels, respectively.